REMARKS

The Applicants thank the Examiner for a thorough search and for considering the Information Disclosure Statements (IDSs) filed June 27, 2003 and January 9, 2003. The Applicants respectfully request consideration of the IDS filed October 14, 2003.

Claims 1-26 are pending. Claims 1-14 have been rejected. Claims 15-26 are new.

I. SUMMARY OF REJECTIONS

Claims 1-3, 5-7, and 9-14 were rejected under 35 USC 102(e) as allegedly anticipated by *Chiang et al.* Claims 4, 8, and 12 were rejected under 35 USC 103(a) as allegedly unpatentable over *Chiang et al.* as applied to claims 1, 5, 9, and 13, further in view of Ahamadvand.

II. INDEPENDENT CLAIMS

A. CLAIM 1

The Office Action stated (page 2), "*Chiang et al.* discloses...marking one or more packets in a packet switched network...based on achieved flow bandwidth information...(Column 2, lines 41-45)". Applicants disagree. *Chiang et al.* (at column 2, lines 41-45) states

> The present invention provides a unique method and apparatus for a dynamic rate, differentiated class-based quality of service agent that provides a quality of service guarantee by taking into account the existing state of the network and user-defined classes of service.

This passage of *Chiang et al.* does not state that the packets are "marked" for any reason, and does not mention a "bandwidth" or an "achieved flow bandwidth". Additionally, the term "the network" in the body of claim 1 relies on the "packet switched network" of line 1 of claim 1 for antecedent basis. Thus claim 1 recites a packet switched network, and there is no indication in column 2, lines 41-45, that the network of *Chiang et al.* is packet switched.

The Office Action (at page 2) further contends that "*Chiang et al.* discloses...marking a first group of one or more packets of data with a first behavioral treatment value (Column 4, lines 15-19);...and marking a second group of one or more packets of said data flow with said second behavioral treatment values (Column 4, lines 15-19);...." Applicants disagree. *Chiang et al.* (at column 4, lines 15-19) states

> When communication workstations 80 are established by the system management, a User Class of Service (UCOS) is established by the system administrator for each workstation. The UCOS includes, for example, high priority user, low priority user, voice only, video/voice user, etc.

There is no mention in this passage of "marking" packets or a "behavioral treatment". The User Class of Service is a priority or level of service assignment that is assigned to the user. There is no discussion of how the User Class of Service is implemented at the network level. A User Class of Service is not a QoS value or behavioral treatment that is marked. Further, claim 1 recites

> marking a first group of one or more packets of ***a data flow*** with a first behavioral treatment value, ...;
> determining ***an achieved flow bandwidth*** for ***the data flow*** based on data traffic within the network;
> determining ***a second behavioral treatment*** value based ***on the achieved flow bandwidth*** within the network; and
> marking a second group of one or more packets ***of said data flow*** with said second behavioral treatment value...(emphasis added).

Thus, claim 1 recites that (1) the second group of packets is from the same data flow as the first group of packets and (2) the second behavioral treatment is based on the achieved data flow bandwidth for the data flow of the first group of packets. The above passage, cited by the Office Action, does not discuss giving two different behavioral treatments to the same data flow. In contrast to claim 1, there is no mention in column 4, lines 15-19, of marking a

first group of packets with a first behavioral treatment and marking a second subsequent group of packets of the same data flow with a second behavioral treatment.

The Office Action further contends that "*Chiang et al.* discloses...wherein the first behavioral treatment value directs devices within the network to treat the first group of one or more packets with a first quality of service treatment (column 4, lines 20-29),...wherein the second behavioral treatment value directs devices within the network to treat the second group of one or more packets with a second quality of service treatment (column 4, lines 20-20)." This is incorrect. Column 4, lines 20-29, state:

> Thus for example, voice calls from phone 84 may have a higher priority than voice/video calls from PC 88. The QoS Agent 96 operates to translate the User Class of Services (UCOS) specified by the system management into Network Class of Services (NCOS). Each NCOS implies minimum network guarantees, such as for example the minimum bandwidth that will be provided for a call, that will be given to a user. For example, a Constant Agreement Service (CAS) NCOS implies that if at call setup time a certain bandwidth is acquired, it will be continued until the end of the call.

Thus, the passage cited by the Office Action does not mention the use of a behavioral treatment marked on a group of packets being used to direct the first group of packets. Instead, *Chiang et al.* states (at column 4, lines 21-24) that the USCO is "specified by the system management" rather than being marked on the packet. Additionally, column 4, lines 20-29, does not mention a first and second group of packets, a first and second behavioral treatment for packets, or a first and second group of packets being marked with a first and second behavioral treatment, respectively. There is no discussion in the cited passage of how the levels of service associated with the UCOS are NCOS are provided at the packet level.

Further, the cited passage does not discuss giving two different behavioral treatments (e.g., two QoS values) to the same data flow. The cited passage does not disclose a second

behavioral treatment to a second group of packets based on the data flow of a first group of packets that were given a different behavioral treatment.

The Office Action (starting on page 2) further contends that "*Chiang et al.* discloses...determining an achieved flow bandwidth for the data flow based on traffic with the network (Column 5, lines 19-25). However, the cited passage states:

> Traffic Monitor 104 provides QoS Agent 96 with information about the network, such as for example increased delay of the system, as provided from Signaling Processes 116, 136. Admission Controller 106 utilizes information provided by the Admission Controls 118, 138 to determine the best level of service currently available within the network as previously described with respect to FIG. 3.

The cited passage does not mention an "achieved flow" and do not mention "bandwidth". For example, "increased delay of the system" is unrelated to bandwidth. A high bandwidth connection may be troubled with frequent delays.

The Office Action also contends that "*Chiang et al.* discloses...determining a second behavioral treatment value based on the achieved flow bandwidth within the network (Column 5, lines 45-55). This is incorrect. *Chiang et al.* states:

> Referring now to FIG. 5B, in step 270, the QoS Agent 96 next determines if there is adequate ***system bandwidth*** available to handle the call, based on the feedback 94 from the IP Network 90. If adequate system bandwidth is not available, in step 310 admission of the call to the system will be rejected or renegotiated. If adequate system bandwidth is available, in step 280 the QoS Agent 96 will determine if the requested class of service is available. If the requested class of service is not available, in step 310 admission of the call to the system will be rejected or renegotiated

Col. 5, lines 46-55 (emphasis added). A "system bandwidth" (mentioned in the above passage) is different than the "achieved flow bandwidth" recited in claim 1. A system bandwidth is the bandwidth of the system, which includes many data flows corresponding to many UCOSs, because column 4, lines 15-19, states, "The UCOS includes, for example, high priority user, low priority user, voice only, video/voice user, etc." The achieved bandwidth

data flow of claim 1, is corresponds to just one behavioral treatment (e.g., QoS value) at any one time. Specifically, first the flow is marked with an initial behavioral treatment, and subsequently after estimating the achieved bandwidth flow, the data flow is marked with the second bandwidth treatment. Thus, the achieved bandwidth flow is the bandwidth of one data flow and not the bandwidth of the system, which may contain a plurality of data flows.

New claim 24 underscores this point by reciting determining a plurality of "achieved flow bandwidths, wherein an achieved flow bandwidth is determined for each of the plurality of data flows."

Further, there is no mention in the cited passage of *Chiang et al.* of a "second" behavioral treatment for application to the same flow to which a first behavioral treatment was already applied.

In addition, column 4, lines 15-19, state, "If the requested class of service is not available, in step 310 admission of the call to the system will be rejected or renegotiated." Thus, in *Chiang et al.*'s system, the system bandwidth is monitored, and if the system bandwidth is not adequate, "the admission of the call to the system will be rejected or renegotiated" for a lower level of service instead of reallocating the bandwidth allocated to the various other calls so that all calls can be accommodated in an appropriate level of service. *Chiang et al.* teach only a single, static assignment of a NCOS. Once an NCOS or QoS value is assigned to a call packet flow in *Chiang et al.*, it never changes. In contrast, in the present claims *dynamic modification of QoS values* is performed in response to real-time changes in available bandwidth for a flow.

The cited passage teaches that only one level of service is allocated to the call, and if the call level of service is no longer adequate for the call, the call is bumped from the

network to some other network (e.g., the PSTN) instead of updating and reallocating the levels of service to accommodate the current bandwidth requirements. In contrast, the first behavioral treatment and second behavioral treatment of claim 1 are applied to the same data flow. The second behavioral treatment is applied dynamically in response to changing flow bandwidth conditions. This dynamic nature of the updating of the behavioral treatments or QoS values is further emphasized in claims 17, 18, and 25.

None of the passages cited by the Office Action discuss giving a second behavioral treatment to second group of packets based on the data flow of a first group of packets that were given a different behavioral treatment.

All the independent claims have at least one feature not found in *Chiang et al.* Therefore, for all of the above reasons, the rejection of claim 1 under 35 USC 102 over *Chiang et al.* should be withdrawn.

B. CLAIMS 4, 5, 9, 13, AND 14

Independent claims 4, 5, 9, 13, and 14 each contain the same features as claim 1 and are therefore allowable for at least the same reasons set forth above for claim 1.

III. DEPENDENT CLAIMS

A. CLAIMS 2-4, 6-8, AND 10-12

Each of claims 2-4, 6-8, and 10-12 contains features that depend from one of the independent claims 1, 5, and 9. Regarding claims 4, 8, and 12, the Office Action does not rely on *Ahamadvand et al.* for curing any of the deficiencies pointed out above regarding *Chiang et al.* Therefore claims 2-4, 6-8, and 10-12 are allowable for at least the same reasons as claims 1, 5, and 9. Although each of the remaining dependent claims 2-4, 6-8, and 10-12 contain features that are separately patentable over the claims from which they depend,

in view of the patentability of independent claims, the remaining dependent claims are not argued at this time to expedite prosecution. For example, regarding claims 2, 6, and 10, the Office Action does not cite any basis for finding that DSCP values are inherent in NCOS or identical to an aspect of NCOS. The Office Action has not established that placing DSCP values in the header of the packets necessarily follows from the *Chiang et al.*'s use of NCOS.

Therefore, the Office Action has not met the required burden of proof for establishing inherency or a prima facie case of anticipation. "In relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art." MPEP 2112, p. 2100-52 (citing *Ex parte Levy,* 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990). Because the rationale of inherency is insufficient, the rejection should be withdrawn.

III. NEW CLAIMS

New independent claims 24 and 25 include the features of claim 1, and new dependent claims 15-23 and 26 depend form one of claims 1 and 25. Therefore new claims 15-29 are allowable for at least the reasons set forth above with respect to claim 1.

Additionally, claims 15 and 25 recite that the first behavioral treatment is determined without regard to the achieved bandwidth flow, which is not taught in the cited passages of *Chiang et al.*.

Claims 16, 17, and 25 recite that the bandwidth provided is the minimal amount of bandwidth required, which is not taught in the cited passages of *Chiang et al.*

Claim 18 and 25 recite that edge devices apply the behavioral treatments to the packets, which is not taught in the cited passages of *Chiang et al.*

Claims 19, 20, and 25 recite repeating the method of claim 1, which is not taught in the cited passages of *Chiang et al.*.

Claims 21-23 recite different methods of estimating the achieved flow, which are not taught in the cited passages of *Chiang et al.*.

Claim 24 recites applying the method to a plurality of the flows and that an initial set of behavioral treatments are applied to the first group of packets, while an updated set of behavioral treatments are applied to the second group of packets that belong to the same data flows as the first group of packets. In contrast to *Chiang et al.*, the achieved bandwidth flows of each of the data flows is determined rather than determining a bandwidth for the system.

Claims 25 and 26 recite combinations of features that are not recited in any one of the other claims in that combination.

IV. CONCLUSION

For the reasons set forth above, all pending claims are patentable over the art of record. Accordingly, allowance of all claims is hereby respectfully solicited.

The Examiner is respectfully requested to contact the undersigned by telephone if it is believed that such contact would further the examination of the present application.

No extension fee is believed to be due. However, to the extent necessary, Applicants petition for an extension of time under 37 C.F.R. § 1.136. The Commissioner is authorized to

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charge any fee that may be due in relation to this application to our Deposit Account No. 50-1302.

Respectfully submitted,

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on Jan 29, 2004 by Teresa Austin